## REMARKS

Claims 1-23 have been examined, with all claims rejected.

Applicant thanks the Examiner for the indication of allowable subject matter in claims 4, 6-9, 13-15, and 17-23. In response, Applicant has placed claims 4, 6, 13, 14, 18, 19, and 20 in independent form.

### *Drawings*

The drawings have been objected to because the reference letter "2m" in Fig. 1 is not clear. Applicant submits herewith a corrected version of Fig. 1.

### *Claim Objections*

Claim 1-23 have been objected to because claims 9 and 21-23 have misspelled "centering" as "centring." Applicant has corrected this misspelling.

### *Claim Rejections - 35 USC § 112*

Claims 1-23 have been rejected under 35 USC § 112 as being indefinite. Applicant has herein amended the claims to be more definite.

### *Claim Rejections - 35 USC § 102*

Claims 1-3, 5, 10-12, and 16 have been rejected under 35 USC § 102(b) as being anticipated by Joho (DE 10060121).

The present invention is directed to a high-speed, permanent-magnet rotor (1) for dynamoelectric machines of high power density. The rotor (1) has a one-piece spindle (2), a cylindrical armouring sheath (4) coaxial with the spindle (2), and a plurality of permanent magnets (3a to 3c) distributed between the spindle (2) and the cylindrical armouring (4). The spindle (2) has on its cylindrical circumference at least one spindle shoulder (2g, 2h), at least one annular channel

(2i) which is used to receive the permanent magnets (3a to 3c), and at least one recess (2j). The cylindrical armouring (4a, 4b) consists of a synthetic-resin impregnated, filament-wounded carbon fibers. All cavity parts of the rotor (1) are filled through a supply channel (2m) located co-centric with the spindle axis, radial supply channels (2k) branching from the supply channel (2m), and at least one recess (2j) using a high pressure, compressed and cured filling compound used for pretensioned sealing and rigid joining of the permanent magnets (3a to 3c), inserts (5a to 5d) which segment the permanent magnets (3a to 3c), and the inner surface of the armouring (4a, 4b).

Joho discloses in figures 1 and 2 a permanent-magnet rotor with one shaft, consisting of a core 1, and at each end of the core one closure disc 4, 5 and one spindle stub 6 and 7. The closure discs 4, 5 and the spindle stubs 6, 7 are form-locked with the core 1 by means of a number of shear bolts 38.

In contrast with the spindle of Joho in which the pieces are joined by shear bolts, the spindle 2 of spindle of the claimed invention has its pieces sealed together using sealing compound. The claimed invention is therefore patentable over Joho for at least this reason.

Further, Joho's outer cylinder 3 is made either of steel (see column 1, line 15), non-magnetizable metallic material austenitic steel, or high strength bronze (column 2, line 42-44). The outer cylinder 3 is connected by either shrinking it onto the closure disks 4 and 5 (column 3, line 11-13), or by using a two-step weld seam 9 (see Fig. 3 and column 3, line 14 19).

On the other hand, the armouring 4 of the claimed invention does not need to be welded and is made of high-strength, weight-saving, electrically as well as magnetically neutral winding laminates having fiber component synthetic-resin impregnated fibers (claim 1), which may be aramid fibers (claim 25), carbon fibers (claim 24), or glass fibers (claim 26). (See description of the present invention, page 1 line 33 - page 2 line 5.) The claimed invention therefore differs fundamentally from that disclosed in Joho because metals are isotropic materials, whereas the claimed compounds are non-isotropic. The claimed invention is advantageous in that the armouring 4 can be made of load-orientated, synthetic reinforced fibers, with the result that the armouring 4 of

the invention weighs about 50 % of the metal armouring 3 of Joho. Therefore, the claimed invention is patentable over Joho for this additional reason.

The permanent magnets of Joho's rotor are hydrostatically mounted (column 1, line 44, 45) by a resin mass introduced into the internal space and supplied to the region of the magnets by centrifuging the rotor and hardening (column 1, line 49-52) during the first running-up-to-speed, so that the cracked regions of the magnets are filled (column 2, line 1, 2). But this running-up-to-speed must be higher than the maximum rotational speed and is applied only during the manufacture of the rotor. (Column 5, lines 14-16).

On the other hand, the claimed invention is different in that the cavities of the rotor are filled with a high pressure, compressed and cured filling compound. Thus, extreme stressing of the rotor is unnecessary, as in Joho, thereby avoiding enforced damage to the magnets. Thus, the claims are patentable over Joho for this additional reason.

Joho also does not teach or suggest the claimed connecting channel 2m. Joho's core 1 has an internal space 8 (see column 2, line 49) in Fig. 1 or 36 in Fig. 7, which Joho explicitly states "serves as a storage space" (column 2, lines 49-50). The space is an enclosed cavity 8, 36 inside the rotor core 1. In contrast, the claimed spindle 2 has no storage space, but instead one open "supply channel 2m." (See Figs. 1 and 2.) Thus, the claims are patentable over Joho for this additional reason.

According to Joho's Fig. 2, the four permanent magnets 2 together form the poles (N and S) seated on the core 1. The filler pieces 16 divide the magnets to form neutral zones 37 not of the individual magnets 2 as in the claimed invention, but of the whole group of four magnets 2 of the poles (N/S). (See column 2 line 63 to column 5 line 6.) Thus, the claims are patentable over the applied reference for this additional reason.

In view of the above amendment, applicant believes the pending application is in condition for allowance.

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Respectfully submitted,

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Attachments

## AMENDMENTS TO THE DRAWINGS

The attached sheets of drawings include changes to Fig. 1.